Please enter the following amendments to the specification.

Please replace the paragraph at page 7, lines 5-10 with the following amended paragraph:

Since the literature has employed various names for enzyme inhibitors, the following will provide definitions for the terms as used herein. It has been found that many variants have been detected in the SELDI ® analysis discussed below. Consequently, it is believed that the definitions should encompass, not only the principal molecular weight of these inhibitors, but also a range of related molecular weight proteins.

Please replace the paragraph at page 11, lines 5-14 with the following amended paragraph:

After 2-3 weeks, the wells having hybridoma colony growth were tested by ELISA to determine which growths produced an antibody immune response to the purified uristatin peptide used to innoculate the mice. The 96 well plate cultures were tested with the uristatin peptide at 1ug/mL coated plates. After coating plates overnight at 2-8°C, all plates were washed and blocked. Cell culture supernatants were then applied at 100µL/well for one hour at room temperature. After washing plates, Goat anti-mouse IgG Horse Radish Peroxidase at 1:2000 dilution was applied at 100µL/well for one hour. Plates were washed once again followed by OPD (o-phenylene diamine dihydrochloride) substrate and read at 490nm on a Spectra Max ® plate reader.

Please replace the paragraph beginning at page 13, line 29 and ending at page 14, line 7 with the following amended paragraph:

All the monoclonal antibody clones were screened based on their ability to bind UTIs in the ELISA assay using the procedure described in Example I and the patterns observed in western blot tests for antibodies using patient and healthy specimens as described in Table 1. The antibodies were grouped by similarity of patterns into three groups and the best representative antibodies of each group selected based on ELISA testing against the UTIs standard. The selection of clones for further study were as follows, from group A: 421 - 305, from group B: 421 - 508, and from group C: 420— 5D1 1. For the selected mother colonies, cell culture supernatants were cloned out twice using the limiting dilution method assure that the antibodies were monoclonal. The hybridomas secreting these monoclonal antibodies in Iscove's Modified Dulbecco's Medium (IMDM) 30% Fetal Bovine Serum (FBS), and 10% Dimethyl Sulfoxide (DMSO) ~~have been~~ were deposited at the American Type Culture Collection, Mannassas, VA 20110-2209, USA on July 28, 2006 and designated as ATCC 421-5Dl 1.5G8. lE4, ATCC 421 - 3G5.4C5.3B6, and ATCC 421-5G8.1A8.5C1 ~~420-5G8.lA8.5C-1~~. The patent Deposit Designations are PTA-7744, PTA-7746, PTA-7745 respectively. The receipt confirms the deposited materials will be available once a U.S. Patent has issued.

Please replace the paragraph at page 14, lines 27-35 with the following amended paragraph:

These initial results were further refined by the SELDI ® technique discussed below. It was found that UTI lot 20-120 contained 10 % of 2-12 kDa proteins (Uristatin I & 2), 15% of 17 kDa proteins (Uristatins), 45% of 35 kDa proteins (Bikunin), and 30% of 60-80 kDa (AMBK or THP) proteins. UTI lot 124-111 had about 80% of the material as the 17.4 kDa band (Uristatin) but also contained amounts (10%) of Uristatin-1 and 2 (5.9 kDa) and 10% of Bikunin (30.9 kDa) but no AMBK was seen to be present. UTI lot 80-117 containing substantially only the 17 kDa Uristatin material and less than 2 % of other molecular weight ranges.

Please replace paragraph at page 15, lines 6-10 with the following amended paragraph:

The measurements made of color developed by the OPD substrate indicated the amount of the monoclonal antibody bound to UTIs in the standards just described, whose contents were determined by molecular weights using the western blot method and SELDI ®. The values were normalized using the polyclonal antibody values and are presented in the table below as percent relative to the polyclonal antibody results.

Please replace the paragraph beginning at page 16, line 29 and ending at page 17, line 9

with the following amended paragraph:

The urine samples were also assayed by an ELISA assay using the same polyclonal antibodies as in Example 2. The antibodies were immobilized in polystyrene membrane wells of the high binding microtiter plates (PN 3690 Corning Life Sciences, Acton, MA), then wells were coated with Super Block ® (Pierce Chem Co., Rockford IL) to ensure none of the following additions attach directly to the plate, then contacted with a urine sample from each patient to bind the antibodies to the UTIs in the sample. The UTI-antibody complex was reacted with a second antibody (goat anti-rabbit antibody) conjugated to alkaline phosphatase, then the unbound conjugated antibody was washed away with TBS/2 % TWEEN-20 (ELISA Wash buffer, Upstate Cell Signaling Solutions, Lake Placid NY) and the immobilized antibody assayed by determining the alkaline phosphatase on the plate by hydrolysis of PNPP (p-Nitrophenyl Phosphate, Disodium Salt) forming an absorbance at 405 nm (yellow) color upon addition of Diethanolamine Buffer (Pierce Chem Co.). The absorbance was measured a spectrophotometric micro titer-plate reader (SpectroMax.® Molecular Devices Corporation, Sunnyvale, CA).

Please replace the paragraph beginning at page 18, line 32 and ending at page 19, line 8

with the following amended paragraph:

Nine monoclonal antibodies from fusion 420 were tested in addition to 420-5Dl 1. Five lots of UTI's were used. Lots 20-120, 124-111, and 80-117 were included again and lots 93-90 ~~(similar to 124-111)~~ and 157-90 ~~(similar to 20-120)~~ were added. The results shown in Fig. 3 show that monoclonal antibody 420-5D 11 was similar to 420-lB7, 420-104, and 420-4E11~~, binding mainly to lots that contained a significant amount of higher molecular weight material, i.e. 60-80 kDa found in lots 20-120 and 157-90~~. The other monoclonal antibodies showed substantially no binding of the UTIs. The control used in these experiments was a monoclonal antibody from fusion 421 (421-5B9) that had been found to have a binding profile similar to the polyclonal antibodies but without pro-inhibitor binding, that is, the monoclonal antibody of421-5B9 binds to each of the UTI lots strongly.

Please replace the paragraphs at page 19, lines 11-26 with the following amended paragraphs:

Two samples of purified total UTIs used in the previous ELISA tests and two samples from patients were reacted with the three representative monoclonal antibodies and one polyclonal antibody and analyzed to determine the proteins binding to the antibodies, using Surface Enhanced Laser Desorption/Ionization (SELDI®) technology (PBS II SELDI® mass spectrometer from Ciphergen, Fremont, California. Binding was measured on two types of surfaces using a standard incubation procedure (High Binding PS2O Chip and a low binding RS100 Chip). The signal to noise (S/N) was determined for each mass bound to the antibody as a measure of significance.

Also analyzed by mass spectroscopy were two urine samples from patient 4 and 20 patient S reacted with antibodies. Both patients were affected by inflammation with elevated white blood cells (by complete blood cell count), C-reactive protein (by high sensitivity immunoassay) ESR(erythrocyte sedimentation rate), urinalysis (by ten panel MULTISTIX PRO® dip strip) and total urinary trypsin inhibitors (by inhibitor assays). Patient 5 was positive for a blood bacterial infection (toximia) and patient 4 was positive for a urinary bacterial infection (Urinary tract infection) both by microbiological cultures.

Please replace paragraph 11 on page 20 with the following amended paragraph:

The chips containing the antibodies and samples were analyzed by surface enhanced laser desorption/ionization (SELDI®).

Please replace the paragraph beginning at page 20, line 19 and ending at page 21, line 11 with the following amended paragraph:

The SELDI® results for the four antibodies are reported in the Table 3 and 4. The results are the masses of proteins bound to the antibodies after exposure to the UTIs in the patients and purified samples. The high sensitivity of this method demonstrates antibody binding to a great many more forms than were detected by the ELISA method. The abundance of forms is expected from the fragmentation, elongation and aggregation that is responsible for the molecular weight ranges for the functional classes of UTI. This method identified exactly the forms bound and does not rely on any interpretation by the composition of the standard. Therefore even though protein bound might be a small percentage of the composition, it will be detected if there is binding to the antibody. Antibody binding epitopes are typically small, on the order of 2 to 5 kDa, when antibodies bind to the peptide or glycoprotein sequence in favor of the tertiary structure of the protein sequences. Therefore a common sequence would be expected to be repeated in all variations and the ability of SELDI® to ~~detected~~ detect all binding events allows a great many variations to be demonstrated. Results from all samples are combined and organized by functional protein groups according to the observed molecular weight falling ~~with~~ within ranges for Uristatin 1 or 2, Uristatin, Bikunin, AMBK, THP and the pro-inhibitors. Those

binding events of high affinity, frequency or importance are in bold face as determined by signal-to-noise ratios of binding events. The primary binding events are in bold face and underlined. Weak binding events are in plain text to document variations in the proteins. These represent very weak cross-reactivities of the type that would not impact an immuno-assay if properly formated.

Please replace Table 3 at page 21 with the following amended table:

Table 3. SELDI® Results Comparison of Three Novel Monoclonal Antibodies for UTIs versus a Standard Polyclonal Antibody for a total measurement of all UTI and pro-inhibitors using purified UTI standards.

UTI Functional Group	1Mab 421-3G5	Mab 421-5G8	Mab 420-SD1I	polyclonal Rb Anti-Uristatin
	IUTI clone	Uristatin clone	THP clone	IUTI and Pro-UTI
Uristatin 1 or 2 - (average molecular weights of 5.9 & 8.5 kDa with kDa range 2-12)	348, **3.86**	**3.48, 3.86**	**3.48, 3.86**	3.49, **3.86**
Uristatin (17 kDa,range 11-22)	15.9, **17.8,** 16.3,18.0	**15.9,** 18.3	**15.9,** 16.3 **18.2**	15.9, **17.8**
Bikunin ~~Bikuinin~~ (33 kDa, range 21-46)	No significant peaks	No significant peaks	41.5, 48.1	**42.5, 42.6**
AMBK (66 kDa, range 42-70)	**62.9**, 62.5,	No significant peaks	67.1	**66.6, 66.7**
THP (85 kDa, 80-91 kDa)	81.9	81.7	**81.7**	**82.6**
p-alpha-I (125 kDa)	No significant peaks	122.6	No significant peaks	**108.6**, 120.0, 142.7
I-alpha-I (220 kDa)	No significant peaks	No significant peaks	No significant peaks	No significant peaks

Please replace Table 4 at page 22 with the following amended Table 4:

Table 4. SELDI® Results Comparison of Three Novel Monoclonal Antibodies for UTIs versus a Standard Polyclonal Antibody for a total measurement of all UTI and pro-inhibitors using purified patient samples.

IUTI Functional Group	Mab 421-3G5	Mab 421-5G8	Mab 420-5D11	polyclonal Rb Anti-Uristatin
	IUTI clone	Uristatin clone	THP clone	IUTI and Pro-UTI
Uristatin 1 or 2- (average molecular weights of 5.9 & 8.5 I kDa with kDa range 2- 12)	**2.82, 3.41,** **3.48,** **5.38, 5.57** **6.30, 7.24,** **3.5, 3.8, 4.0,** **5.6,6.0, 6.3,** **8.0, 9.2, 9.8,** **10.9**	**2.82, 3.41, 3.48,** 4.0, 5.4, **7.2,** **9.18** **9.85**	**2.82, 3.0, 3.5,** **4.7**, 3.7, 5,4, 5.6, 7.2, 3.7, 10.8	**2.8, 5.0, 5.4, 7.2,** **10.7**, 3.5, 4.0, 5.9 6.0, 6.3, 8.1, 10.7
Uristatin (17 kDa,range 11-22)	**11.8, 18.0,** 16.3, 13.4, 14.0	12.0, 14.0,13.5, **21.1**	**11.9,** 13.5,21.1,	**13.4, 14.0,** 16.3
Bikunin ~~Bikuinin~~ (33 kDa, range 21-46)	**21.1**, 33.6, 35.2,33.5, 45.9	23.0, 22.7	23.3, 41,6	**21.2, 22.6, 23.3,** **33.4**, 33.1 35.2, 42.3
AMBK (66 kDa. range 42-70)	**67.0**	No significant peaks	No significant peaks	58.6
THP (85 kDa, 80-91 kDa)	81.9, 91.1	No significant peaks	**80.2,** **80.6** **81.9**	82.6, 79.2

p-alpha-I (125 kDa)	No significant peaks	128.5,132.1	No significant peaks	**101.1, 103.7, 106.3**, 120.0, 1234, 133.0, 142.7
I-alpha-I (220 kDa)	No significant peaks	No significant peaks	No significant peaks	No significant peaks

Please replace the paragraphs at page 23, lines 1-23 with the following amended paragraphs:

The results demonstrated that the three types of monoclonal antibodies detect different patterns of UTIs and ~~the~~ these patterns include a range of variants. The monoclonal antibodies are specific for UTIs whereas the polyclonal antibodies detect both UTIs and Pro-inhibitors. We can not see all the urinary trypsin inhibitor fragments that the clones detect in the patterns represented in the SDS gels. The gel method is not sensitive enough to report all of the UTIs the antibody can bind. More of the fragments actually bound are shown in the SELDI® data. All fragments bound are not listed as additional variations would be found as different patients are tested. The extent or strength of binding to a given UTI was estimated relative to other UTIs. The strongest binding by smallest fragments are the best representation of the epitopes bound by each antibody. The low molecular weight sequences in the Uristatin 1 or 2 functional groups are the smallest linear sequence with strong binding.

In Tables 3 and 4 using purified standards and patients, the primary binding for Mab 421-3G5 was strong for Uristatin-1 or -2, Uristatin, Bikunin, and AMBK and much less strong for THP with no significant pro-inhibitor binding. The primary binding for Mab 421-5G8 was with Uristatin- 1 or -2, less for Uristatin and much less strong for THP or Bikunin or pro-inhibitors. The primary binding for Mab 420-SD 11 was strong for THP, Uristatin, and Uristatin-1 or -2, less strong for Bikunin or AMBK. The polyclonal binding was with all forms including the pro-inhibitors. These results were as expected based on SDS gels. The SELDI® results however also demonstrated that all three antibodies bound to Uristatin-1 or -2 in the standards very strongly at 3.9, and with high affinity at 2.8 and 3.5. The SELDI® results also show several low affinity binding events, not strong enough to hinder specificity, but measurable.

Please replace the paragraph beginning at page 23, line 24 and ending at page 24, line 2 with the following amended paragraph:

The results in Table 4 using individual patient samples, ~~the~~ demonstrate the same 25 primary binding patterns for Mab 421-3G5, Mab 421-5G8 , Mab 420-5Dl 1 and the polyclonal shown with the standards. Again these results were as expected based on SDS gels. The SELDI® results however also demonstrated that all three antibodies strongly bound to several new forms of Uristatin-1 or -2, Uristatin, Bikunin and AMBK within the expected ranges for each. In particular primary binding to 2.8, 5.4, 7.2, 11.8, 21 1 and 67 0 kDa were observed in patient

samples but not in the purified standards This demonstrated the variations expected in pathological conditions for reasons previous stated. The lack of these peaks in the purified standards is the result of the pooling of many patient and purification of specimens to the target molecular weight targets of 15, 30 and 60 kDa. The SELDI® also showed at least some cross-reactivity to THP in the polyclonal and Mab 420-5D 11 case.

Please replace the paragraph at page 24, lines 4-14 with the following amended paragraph:

Example ~~7~~ 8

Four proteins, Human Serum Albumin (HSA), Tamm-Horsfall protein (THP), α-1 -microglobulin (α -i M), and α -i -antichymotrypsin (α -i ACT) were tested for crossreactivity in the Uristatin sandwich ELISA test. These proteins were chosen either because of their high concentration in urine or because they were suggested as possible cross reactants during the western blot or SELDI® work that used these antibodies with urine samples. Cross reactivity studies were done in a competitive format to allow relative binding to be compared. For example the binding of antibodies to uristatin was significantly stronger than to THP, the assay for uristatin was not interfered with by THP. The only proteins and antibodies found to be cross-reactive in the competitive sandwich ELISA test was THP with Mab 420-5D 11 and the polyclonal antibody (See Table 5).